

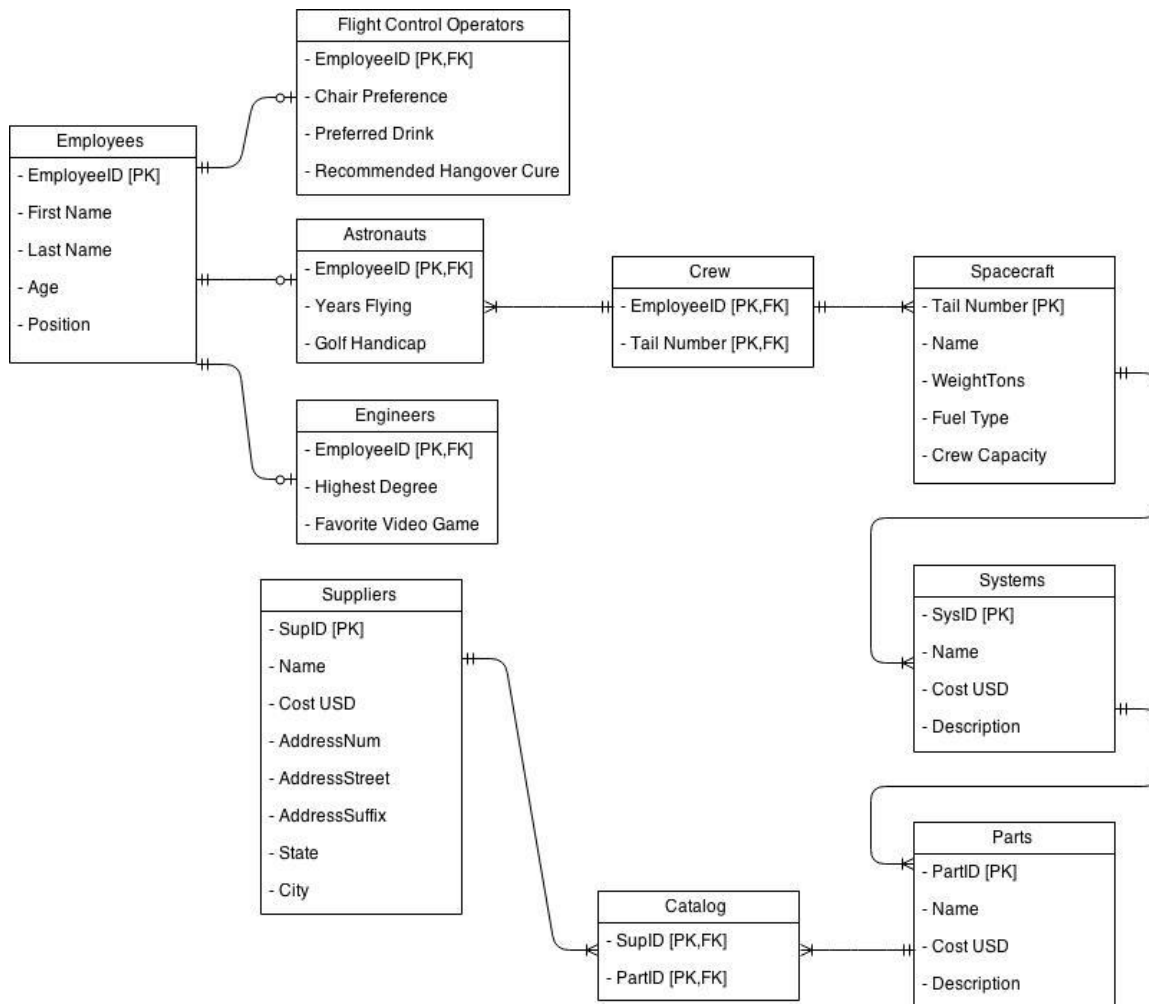
## 1. Functional Dependencies:

Employees: EmployeeID → First name, Last name, Age, Department  
 Engineers: EmployeeID → Highest Degree, Favorite Game  
 Astronauts: EmployeeID → Years Flying, Golf Handicap  
 Flight Control Operators: EmployeeID → Chair Preference, Preferred Drink, Recommended Hangover

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Crew: EmployeeID, Tail Number →  
 Spacecraft: Tail Number → Name, WeightTons, Fuel Type, Crew Capacity  
 Systems: SysID → Name, costUSD, Description  
 Parts: Part ID → Name, costUSD, Description  
 Catalog: SupID, PartID →  
 Suppliers: SupID → Name, AddressNum, AddressStreet, AddressSuffix, State, City, Payment Terms

2.



3. In order for a database to be in 3NF it must already be in 1NF and 2NF which means that the database must have only atomic data values, no partial key attribute dependencies and no multiple key (transitive) dependencies. Going through the list of functional dependencies it can be seen that each attribute of each relation is dependent on the key, the whole key and nothing but the key. By examining the ER diagram above it can be seen how each attribute would consist of atomic values and how even in associative tables there are no partial key dependencies.